

## Municipal Facilities Operation & Management: **2.1.11 Storm Water Conveyance System**

### **2.1.11.1 Introduction**

This program component is applicable to all City departments that operate or maintain a storm drain system. The storm drain system functions primarily to collect and convey surface runoff to receiving waters during storms in order to prevent flooding. It is a common activity to maintain the storm drain system so that it functions hydraulically, as intended during storms. The goal of this program is to reduce the impact of storm drain operation and maintenance activities on storm water quality.

The City's program must meet the requirements of the San Diego Municipal Storm Water Permit, as described in Table 2.1.11-1.

**Table 2.1.11-1. Permit Requirements – Storm Drain Operation and Management.**

<b>Section</b>	<b>Requirement (Summary)</b>	<b>Permit Section</b>
2.1.11.2	Implement pollution prevention methods	F.3.a.(1)
2.1.11.2	Designate and implement minimum BMPs to protect water quality	F.3.a.(4)
2.1.11.2	Implement a maintenance schedule for all structural controls designed to reduce pollutant discharges and the storm water conveyance system, to include: <ul style="list-style-type: none"> <li>▪ Inspection &amp; removal of waste between May 1 and Sept. 30</li> <li>▪ Additional cleaning between October 1 and April 30</li> <li>▪ Records of cleaning and waste removal quantity</li> <li>▪ Proper waste disposal</li> <li>▪ Measures to eliminate discharges during maintenance &amp; cleaning</li> </ul>	F.3.a.(5)
2.1.11.2	Limit infiltration from sanitary sewer to storm drains through routine maintenance	F.5.i.
2.1.11.2	Implement an Educational Program for all pertinent target audiences	F.4.a. F.4.b. F.4.c. F.8
2.1.11.4	Document activities for Jurisdictional Urban Runoff Management Program Annual Report	I.

Objectives of this program component are to:

- Inspect and clean catch basins and keep appropriate records.
- Remove trash and debris from open channels and properly dispose of these materials to prevent them from being washed into receiving waters.

- Report prohibited non-storm water discharges observed during the course of normal daily activities so they can be investigated, contained and cleaned up or eliminated.
- Review maintenance activities to verify that appropriate storm water BMPs are being utilized.
- Educate employees of pollution prevention techniques.

#### **2.1.11.2 Activities**

The purpose of this section is to identify activities required to operate and maintain the storm drain system that may be a potential source of pollutants to the storm drain conveyance system and receiving waters. Existing storm drain O&M activities include the following:

1. Storm Drain Inlet Inspection and Cleaning – Cleaning timing and frequency and identifying known problem areas
2. Storm Drain Line Inspection and Cleaning – Cleaning timing and frequency and identifying known problem areas
3. Storm Drain Cleanout and Structure Inspection and Cleaning – Cleaning timing and frequency
4. Management of Storm Drain System Solid Waste – Management of material removed by storm drain operation and maintenance activities, including debris capture systems, containment, storage and disposal
5. Debris Basin Inspection and Cleaning
6. Storm Water Pump Station Inspection and Cleaning
7. Drainage Ditches Cleaning – Concrete lined and natural open channels
8. Emergency Operations – Plugged lines/flooding

The following best management practices will be implemented to prevent storm drain O&M activities from entering into the storm drain conveyance system and receiving waters.

##### *Routine Inspection and Cleaning*

1. Inspect and clean as needed all inlets/catch basins at least once every other year (at least 50% of the entire system inspected and cleaned each year)
2. Inspect and clean as needed all inlets/catch basins in known problem areas at least once a year.
3. Inspect and clean as needed all storm drain lines in known problem areas at least once a year.
4. Inspect and clean as needed sumps and debris racks at pump stations, detention basins, drainage ditches and debris basins throughout the year.

5. Cleaning activities may occur on a year round basis, however, known problem areas shall be targeted prior to the rainy season.
6. Inspect and clean as needed all storm drain facilities that have been affected by emergency response activities.
7. Additional cleanings shall be conducted as necessary during the rainy season (Oct. 1<sup>st</sup> through April 30<sup>th</sup>).
8. Slide and Embankment Repair of Channels
  - a. Haul slide debris or removed material to an approved dump site as soon as practicable. Do not dump material into or near storm drain inlets, ditches, or watercourses.
  - b. Notify proper regulatory agencies about material that has naturally fallen into a watercourse due to a substantial slide.
  - c. Use temporary erosion control measures, such as sediment basins, silt fences, hay bales, or blankets, if necessary to protect the slope until repairs have been completed. Revegetate denuded slopes as soon as practical to prevent future erosion.
9. When materials are saturated with water, dewatering will be done in an area that does not drain to storm drains or creeks.

#### *Solid Waste Management*

1. As much debris, silt, trash and sediment as possible shall be removed from the storm drain system when cleaning. Debris capture systems shall be used to prevent material from washing into streams or channels.
2. Provide proper containment for the temporary storage of removal debris during cleaning. Surface types of temporary storage sites shall be of concrete, asphalt or other type of impermeable material.
3. Waste collected from drain systems shall be dewatered as necessary for proper disposal to the landfill. Dewatering sites should not drain to storm drains or receiving waters.
4. Waste collected from drain systems should be identified, quantified and recorded.

#### *Staff/Contractor Training and Coordination*

1. Provide staff training for storm drain operation and maintenance personnel at least once a year with emphasis on controlling storm water pollution through storm drain operation and maintenance.
2. Include provisions for storm water pollution prevention in contract specifications or agreements for conducting storm drain operation and maintenance.

#### *Record Keeping and Evaluation*

1. Maintain records tracking all cleaning activities. The records shall show when and which facilities have been inspected and cleaned.

2. Provide a referral and follow-up process between storm drain operation and maintenance of illicit connection and illegal dumping investigation staff for problems found.
3. Document any unusual flows observed during inspection (particularly dry weather flows) and the follow-up actions/referrals (i.e., Storm Water Program contacted, etc.).
4. Review the records annually to critique the effectiveness of storm drain operation and maintenance activities. Modifications to O&M policies and procedures shall be documented and reported.
5. Report modifications and corrective actions identified during self- inspection to the Storm Water Program annually as part of the Program Assessment.

#### *Operational Improvement, Structural Retrofit and Design Changes*

1. Review the storm drain operation and maintenance program annually and if needed, identify operational improvements, opportunities for structural retrofit and design changes.
2. Operation and maintenance provisions shall be included in planning and design phases of CIP projects to ensure that storm water quality issues are considered in the design of storm drain systems.

#### Twenty-Four Hour Non-Storm Water Discharge Reporting

Certain non-storm water discharges, because of their nature or magnitude, require timely reporting to the Regional Board. A report will also be forwarded to the Storm Water Program for record keeping purposes. Non-storm water discharges that pose a significant threat to water quality or human health, will be evaluated by City staff against the "24-Hour Non-Storm Water Discharge Reporting Checklist". A significant threat to water quality or human health is determined on a case-by-case basis and will be dependent on the type of pollutant, the degree of the violation (i.e. the amount of pollutant discharged into the municipal storm drain system), the proximity to receiving water bodies, the potential for exposure to the public, and the potential for environmental damage. Examples of discharges that will be reported include sewage spills and non-storm water discharges, such as a significant sediment load into Los Penasquitos Lagoon.

Where staff determines that discharges pose a significant threat to water quality or human health, the Storm Water Program or responsible City department will notify the Regional Board orally and by facsimile within 24 hours of the discharge event. Additionally, a written report of the event and follow up actions will be sent to the designated Regional Board contact for the Municipal Storm Water Permit, if needed, within 5 working days of the day the event was identified. A standard reporting form will be created by the Storm Water Program to be used by all City departments to facilitate

consistency and maintain clear communication with the Regional Board. The report will contain the following information:

- Description of the event and it's cause;
- Duration of the event;
- Time the event is expected to continue if it has not been corrected;
- Steps taken to correct the non-storm water discharge event.

## Education & Training

### *1. Internal/Municipal Education:*

The City of San Diego plans to conduct two levels of education and training for staff: General and Activity Specific. All staff will receive a basic introduction to the issue via a "General Storm Water" workshop created and provided to City departments by the General Services Storm Water Pollution Prevention Program. Additionally, those departments or work groups that perform work activities specifically identified in, and affected by, the Permit will create and execute and fund Activity Specific training sessions to introduce new work processes, functions and behaviors that incorporate the Best Management Practices (BMPs) necessary for staff to prevent illegal discharges into the City's storm water collection and conveyance system and recreational waters. Additionally, the Departments will fund the External Education and Outreach elements in this plan. All education and outreach covered by the permit shall contain the phrase, "Another City of San Diego Think Blue Program protecting our beaches, bays and watersheds."

#### *A) General Storm Water Training Provided By the Storm Water Program:*

The General Storm Water workshops, while created and funded by the Storm Water Program, are primarily being given by trainers to the staff of their respective departments. And, Items 2,3,4,5 and 6, below, are the educational materials created for the workshops. A "Train the Trainer" workshop was also created and given by the Storm Water Program (Item 7) to familiarize the trainers on the material and subject matter prior to rolling out the General Training workshop to their department staff.

**Table 2.1.11-2. Storm Water Program General Training.**

ITEM	AVAILABLE
1. Clean Water Leader/3-Cs BMP Reference Card	July 2001
2. General Storm Water Training Video	October 2001 To be completed by June 2002

City of San Diego  
Storm Water Pollution Prevention Program  
**Urban Runoff Management Program**  
**Chapter 2- Storm Water Best Management Practices**

3. City Employee Brochure	October 2001
4. Stop Pollution Pad	October 2001
5. Employee Knowledge & Behavior Survey. To be given before and after each General Storm Water Workshop by department trainers	October 2001
6. Frequently Asked Questions for department Trainers	October 2001
7. Train the Trainer Sessions. Training of department trainers on content and materials for the General Storm Water Workshops	September 10-14, 2001
8. Storm Water Newsletter	July/August 2002*

\* Note that Items 1 through 7 occurred in FY 2002, and that Item 8 is slated for Fiscal Year 2003 and reflects an estimated cost and available date.

**B) Activity Specific Storm Water Best Management Practices Training(s):**

The Departments responsible for storm drain maintenance will work closely with the Storm Water Program to create a complete training module for staff and to establish a system to update and improve the information and training materials available to staff.

**Table 2.1.11-3. Department Training Activities.**

ITEM	AVAILABLE*
1. Identify needs, create and execute Activity Specific trainings/workshops.	Completed by February 2003
2. Create Storm Water BMP Reference Binders for Staff	Completed by February 2003
3. Update BMP Reference Binders -periodic	June 2004
4. Storm Water BMP Bulletin Boards in Employee Area(s)	June 2003
5. Train new employees on Storm Water activities. General and Activity Specific to be conducted by supervisor	New Employee Orientation
6. An applied knowledge demonstration of the classroom/workshop training material(s) via a tailgate or field application training session	February 2003

\* Note the completion dates listed are estimated. Actual completion dates may vary depending upon other program factors.

**2. External Education:**

Target audiences associated with operation and maintenance activities for the storm drain conveyance system include: Construction (Contractors), property owners and tenants, and the General Public. The following educational outreach will be conducted to expand the knowledge of the target audiences and how their actions can help prevent pollutants from entering into the storm drain system and receiving waters.

**Table 2.1.11-4. Department External Education Activities.**

ITEM	AVAILABLE *
1. All publicly funded education/outreach covered by the permit shall contain the phrase, "Another City of San Diego Think Blue program protecting our beaches, bays and watersheds".	January 2002
2. Include storm water pollution prevention information in any mailings or notifications associated with storm drain maintenance.	
3. Storm Water/Storm Drain information shall be made available on the Department Web Site.	January 2002?

\* Note the completion dates listed are estimated. Actual completion dates may vary depending upon other program factors.

### **2.1.11.3 Phasing**

#### Year 1 (July 1, 2001 – June 30, 2002):

- Prepare/Implement education program
- Prepare SWPPP
- Implement existing activities that are considered “storm water practices”
- Identify known problem areas

#### Year 2 (July 1, 2002 – June 30, 2003):

- Implement Year 2 storm water practices
- Prepare projected storm water budget
- Education activities
- Prepare & submit annual activities report
- Assess Revise SWPPP, budget

#### Year 3 (July 1, 2003 – June 30, 2004):

- Implement Year 3 storm water practices identified in SWPPP
- Education activities
- Prepare & submit annual activities report
- Assess SWPPP, revise budget

#### Year 4 (July 1, 2004 – June 30, 2005):

- Implement Year 4 storm water practices identified in SWPPP
- Education activities
- Prepare & submit annual activities report
- Assess SWPPP, revise budget

#### Year 5 (July 1, 2005 – June 30, 2006):

- Implement Year 4 storm water practices identified in SWPPP
- Education activities
- Prepare & submit annual activities report
- Assess SWPPP, revise budget

Actual implementation of the activities listed above is dependent upon identification of funding in future yearly budgets and City Council approval.

#### 2.1.11.4 Annual Assessment

The following form is representative of the quantitative and qualitative measures that will be tracked by the Storm Water Program regarding the Storm Water Conveyance System component in order to prepare the Jurisdictional Urban Runoff Management Program annual assessment. *These assessment factors and questions are presented for information only; some questions may be modified prior to each annual assessment period, and not all of the factors or questions below may apply to each component's responsible department(s).* Prior to each fiscal year, a tailored Annual Assessment Form will be distributed to responsible departments, and will include an Excel spreadsheet containing direct and indirect quantitative and qualitative measures similar to the example below. The Storm Water Program will provide a blank copy of the Annual Assessment Form and additional guidance to department management prior to the beginning of each fiscal year. Submission of this report will require department director approval.

#### **Program Assessment Form - Municipal Facilities Operations and Management - Storm Water Conveyance System**

##### **QUANTITATIVE ASSESSMENT:**

Activity	Quantity	Units	Comments
Number of high priority municipal facilities		#	
Number of high priority municipal facilities targeted for inspection		#	Due to calendar-year vs. fiscal year, staffing, budget, etc., as well as Permit Section F.3.b.(6)(d), the number of sites targeted for inspection may be less than the actual number of sites.
Number of high priority municipal facilities inspected		#	Number of sites (not the number of inspections, which may or may not be the same).
Number of medium and low priority municipal facilities inspected		#	See above.
Quantity of material removed from MS4		tons	direct measure; report in tons.
Quantity of debris removed that could have enter MS4 (i.e. street sweeping, litter removal)		tons	direct measure; report in tons.

**QUALITATIVE ASSESSMENT:**

1. Describe the major accomplishments of this component over the past year.

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2. Summarize the educational and outreach activities conducted for this component over the past year to educate staff on water quality principles.

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3. Summarize new activities or improvements to be implemented next year as a result of your self-assessment.

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4. Other comments.

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**FINANCIAL ASSESSMENT:**

Estimated annual storm water expenditures:

Personnel Expenditures: \_\_\_\_\_

Non-personnel Expenditures: \_\_\_\_\_